

WHAT IS CLAIMED IS:

1. An integrated inspection system adapted to inspect a substrate, the integrated inspection system comprising:
 - a first inspection station adapted to perform a first inspection of the substrate at a first resolution and for identifying defect candidate sites, the first inspection station disposed at a first known location,
 - a controller adapted to determine position information associated with each of the identified defect candidate sites,
 - a second inspection station adapted to perform a second inspection of the defect candidate sites at a second resolution, where the second resolution is higher than the first resolution, the second inspection station disposed at a second known location, and
 - a substrate stage adapted to move the substrate between the first known location of the first inspection station and the second known location of the second inspection station, and to move the substrate under both the first inspection station and the second inspection station.
2. The integrated inspection system of claim 1, wherein the first inspection station is an optical inspection station.
3. The integrated inspection system of claim 1, wherein the second inspection station is a scanning probe microscope.
4. The integrated inspection system of claim 1, wherein the second inspection station is an atomic force microscope.
5. The integrated inspection system of claim 1, wherein the second inspection station is a near field scanning optical microscope.
6. The integrated inspection system of claim 1, wherein the second inspection station is a magnetic force microscope.

7. The integrated inspection system of claim 1, wherein the second inspection station is a scanning tunneling microscope.
8. The integrated inspection system of claim 1, wherein a distance between the first inspection station and the second inspection station is fixed and known by mechanically referencing critical components of the first inspection station and the second inspection to a common structure.
9. A method for inspecting a substrate, the method comprising the steps of:
 - a) positioning the substrate at a first inspection station using a substrate stage,
 - b) imaging a surface of the substrate at a first resolution using the first inspection station,
 - c) identifying defect candidate sites on the surface of the substrate,
 - d) positioning the substrate at a second inspection station using the substrate stage, and
 - e) imaging the defect candidate sites using the second inspection station.
10. The method of claim 8, wherein steps a-e are performed under the control of a controller connected to the first inspection station, the second inspection station, and the substrate stage.
11. The method of claim 9, wherein the second inspection station is a scanning probe microscope.
12. The method of claim 9, wherein the second inspection station is an atomic force microscope.
13. The method of claim 9, wherein the second inspection station is a near field scanning optical microscope.
14. The method of claim 9, wherein the second inspection station is a magnetic force microscope.

15. The method of claim 9, wherein a distance between the first inspection station and the second inspection station is fixed and known by mechanically referencing critical components of the first inspection station and the second inspection to a common structure.
16. A method for optimizing inspection parameters of an integrated inspection system, the method comprising the steps of:
 - a) positioning a substrate at a first inspection station using a substrate stage,
 - b) imaging a surface of the substrate at a first resolution using the first inspection station,
 - c) identifying defect candidate sites on the surface of the substrate based on the inspection parameters,
 - d) positioning the substrate at a second inspection station using the substrate stage,
 - e) imaging the defect candidate sites at a second resolution using the second inspection station, where the second resolution is greater than the first resolution,
 - f) reviewing the defect candidate sites imaged with the second inspection station to determine which of the defect candidate sites are actual defect sites, and
 - 15 g) altering the inspection parameters based on the determination of which of the defect candidate sites are actual defect sites.
17. The method of claim 16, wherein steps a-g are performed automatically with a controller connected to the first inspection station, the second inspection station, and the substrate stage.
18. The method of claim 16, wherein the second inspection station is an atomic force microscope.
19. The method of claim 16, wherein the second inspection station is a near field scanning optical microscope.

20. The method of claim 16, wherein the second inspection station is a magnetic force microscope.